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PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q96930

Satoshi IYANAGI

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For: TIRE BUILDING DRUM, AND BUILDING SYSTEM, PROCESS SETUP METHOD
AND MANUFACTURING METHOD FOR TIRE BUILT BY SAME

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TIRE BUILDING DRUM, AND BUILDING SYSTEM, PROCESS SETUP

METHOD AND MANUFACTURING METHOD FOR TIRE BUILT BY

SAME

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TECHNICAL FIELD

[0001] The present invention relates to a tire building drum having a circular drum core defining an internal shape of a green tire, the drum core consisting of several rigid segments, and a building system, process setup method and manufacturing method for a tire built by this tire building drum. The present invention is particularly intended to enable a low-cost tire building drum which is capable of manufacturing tires of multiple sizes.

RELATED ART

[0002] In the international application PCT/JP03/09949, the present applicant proposed a tire building drum comprising bead lock means for holding a pair of bead cores and a circular drum core expansively supporting a center portion of a carcass band to define an internal shape of a green tire with the outer contour, the drum core consisting of several rigid segments which are radially expandable/contractible and which are circumferentially adjacent to each other to form the above-mentioned outer contour.

[0003] Since this tire building drum has the drum core consisting of the several rigid segments, when tire components such as a belt member, a tread member and a side wall member are attached on a center portion of an inflated carcass band, these component can be accurately attached with the drum core being as a base. In additional, the drum core is installed in such a manner that it is located on the central axis of the same building drum in relation to the pair of bead lock means, so that an accuracy of applying these components in relation to the bead cores positioned by the bead lock means can be increased and a tire with higher accuracy can be built. This tire building drum possesses these features.

[0004] In such a tire building drum, however, the internal shape of the green tire corresponds one-to-one with the outer contour of the drum core, so that it is necessary to prepare different tire building drums having different types of drum cores for green tires of different sizes and internal shapes. Thus, in the system of manufacturing tires in many different sizes, at least one drum core for every